AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 (Currently Amended). A magneto-optical indicator element comprising:

a substrate; ~~and~~

a thin film indicator structure comprising a plurality of thin-film layers disposed on a said substrate, at least one of said layers comprising magneto-optically (MO)-active material having predetermined magnetic properties including magnetic anisotropy, magnetization saturation value, coercive field value; and a magneto-optical effect value; said indicator structure including at least one of said layers having a thickness and/or refractive index modulated in a predetermined fashion; said indicator structure having at least one optical mode which is at least partially localized within and/or at at least one interface of said at least one MO-active layer; said at least one optical mode being at least partially localized in said one layer having modulated thickness and/or refractive index,

further comprising a thin layer of metal having a thickness of no more than 15 nm and selected from the group, consisting of: Ag, Al, Au, Cu disposed contiguous to said layer of ferromagnetic material,

wherein the optical mode comprises a surface plasmon mode and at least one magneto-optically-active layer provides a single surface that supports the surface plasmon mode,

wherein said MO-active layer comprises ferromagnetic material,

wherein said thin layer of metal has a constant thickness, and

wherein said metal layer has a modulated thickness and is disposed adjacent to a thin layer of metal on a side opposite to the MO-active layer.

2-18. (Cancelled)

19. (currently amended) ~~The~~ A magneto-optical indicator element ~~of claim 18~~ comprising:

a substrate; and

a thin film indicator structure comprising a plurality of thin-film layers disposed on a said substrate, at least one of said layers comprising magneto-optically (MO)-active material having predetermined magnetic properties including magnetic anisotropy, magnetization saturation value, coercive field value; and a magneto-optical effect value; said indicator structure including at least one of said layers having a thickness and/or refractive index modulated in a predetermined fashion; said indicator structure having at least one optical mode which is at least partially localized within and/or at at least one interface of said at least one MO-active layer; said at least one optical mode being at least partially localized in said one layer having modulated thickness and/or refractive index;

wherein the optical mode comprises a surface plasmon mode;

wherein at least one magneto-optically-active layer provides a single surface that supports the surface plasmon mode;

wherein said MO-active layer comprises ferromagnetic material;

further comprises a thin layer of metal having a thickness of no more than 15 nm and selected from the group, consisting of: Ag, Al, Au, Cu disposed contiguous to said layer of ferromagnetic material, and

wherein said thin layer of metal has a modulated thickness.

20. The magneto-optical indicator element of claim 18 wherein said thin layer of metal has a constant thickness.

21. The magneto-optical indicator element of claim 20 wherein said metal layer of modulated thickness is disposed adjacent to a thin layer of metal on a side opposite to the MO-active layer.

22. (currently amended) ~~The~~ A magneto-optical indicator element ~~of claim 20~~ comprising:

a substrate; and

a thin film indicator structure comprising a plurality of thin-film layers disposed on a said substrate, at least one of said layers comprising magneto-optically (MO)-active material having predetermined magnetic properties including magnetic anisotropy, magnetization saturation value, coercive field value; and a magneto-optical effect value; said indicator structure including at least one of said layers having a thickness and/or refractive index modulated in a predetermined fashion; said indicator structure having at least one optical mode which is at least partially localized within and/or at at least one interface of said at least one MO-active layer; said at least one optical mode being at least partially localized in said one layer having modulated thickness and/or refractive index,

wherein the optical mode comprises a surface plasmon mode;

wherein at least one magneto-optically-active layer provides a single surface that supports the surface plasmon mode;

wherein said MO-active layer comprises ferromagnetic material;

further comprises a thin layer of metal having a thickness of no more than 15 nm and selected from the group, consisting of: Ag, Al, Au, Cu disposed contiguous to said layer of ferromagnetic material;

wherein said thin layer of metal has a constant thickness; and

wherein a sufficiently transparent layer of material with a spatially modulated refractive index is disposed adjacent to the thin layer of metal on the side opposite to the substrate.

23. The magneto-optical indicator element of claim 22 wherein said layer of modulated thickness is made of transparent dielectric material.

24 – 27 (Cancelled).

28. (currently amended) ~~The~~ A magneto-optical indicator element ~~of claim 26~~ comprising:

a substrate; and

a thin film indicator structure comprising a plurality of thin-film layers disposed on a said substrate, at least one of said layers comprising magneto-optically (MO)-active material having predetermined magnetic properties including magnetic anisotropy, magnetization saturation value, coercive field value; and a magneto-optical effect value; said indicator structure including at least one of said layers having a thickness and/or refractive index modulated in a predetermined fashion; said indicator structure having at least one optical mode which is at least partially localized within and/or at at least one interface of said at least one MO-active layer; said at least one optical mode being at least partially localized in said one layer having modulated thickness and/or refractive index,

wherein the optical mode is a localized surface plasmon mode;

wherein said localized surface plasmon mode is at least partially localized in the at least one MO-active layer; and

wherein the at least one layer with a modulated thickness is a metal, selected from the group, consisting of: Ag, Au, Al, Cu.

29 – 36 (Cancelled).

37. (currently amended) ~~The~~ A magneto-optical indicator element ~~of claim 1~~ comprising:

a substrate; and

a thin film indicator structure comprising a plurality of thin-film layers disposed on a said substrate, at least one of said layers comprising magneto-optically (MO)-active material having predetermined magnetic properties including magnetic anisotropy, magnetization saturation value, coercive field value; and a magneto-optical effect value; said indicator structure including at least one of said layers having a thickness and/or refractive index modulated in a predetermined fashion; said indicator structure having at least one optical mode which is at least partially localized within and/or at at least one interface of said at least one MO-active layer; said at least one optical mode being at least partially localized in said one layer having modulated thickness and/or refractive index,

wherein the optical mode is a waveguide mode.

38. The magneto-optical indicator element of claim 37 wherein said waveguide mode is at least partially localized in the at least one MO-active layer.

39. The magneto-optical indicator element of claim 38 wherein the MO-active layer possesses a positive real part of the dielectric permittivity in the operational wavelength range of the magneto-optical indicator film.

40. The magneto-optical indicator element of claim 39 wherein the at least one layer with a modulated thickness is made of dielectric material that is transparent in the operational wavelength range of the magneto-optical indicator film.

41. The magneto-optical indicator element of claim 39 wherein the MO-active layer is selected from the group consisting of:

iron garnets modified with at least one element selected from the group consisting of Bi, Y, Ga, Ce;

iron garnets modified with at least one element selected from the group consisting of rare earth elements;

intermetallic compounds and alloys;

ferromagnetic oxides;

magnetic semiconductors.

42. The magneto-optical indicator element of claim 39 wherein the substrate is a monocrystalline substrate.

43. The magneto-optical indicator element of claim 42 wherein the MO-active layer is single crystal layer.

44. The magneto-optical indicator element of claim 43 wherein the MO-active layer possesses magnetic anisotropy chosen from the group consisting of: in-plane easy-axis anisotropy, perpendicular anisotropy, easy-plane anisotropy.

45. The magneto-optical indicator element of claim 40 wherein the thickness modulation is made in the form of self-assembled, ordered colloids made of dielectric material that is transparent in the operational wavelength range of the magneto-optical indicator film.

46. (currently amended) ~~The~~ A magneto-optical indicator element ~~of claim 1~~ comprising:

a substrate; and

a thin film indicator structure comprising a plurality of thin-film layers disposed on a said substrate, at least one of said layers comprising magneto-optically (MO)-active material having predetermined magnetic properties including magnetic anisotropy, magnetization saturation value, coercive field value; and a magneto-optical effect value; said indicator structure including at least one of said layers having a thickness and/or refractive index modulated in a predetermined fashion; said indicator structure having at least one optical mode which is at least partially localized within and/or at at least one interface of said at least one MO-active layer; said at least one optical mode being at least partially localized in said one layer having modulated thickness and/or refractive index,

wherein the optical mode is a hybrid surface plasmon mode.

47 – 61 (cancelled).

62 (Currently Amended). A method of manufacturing a magneto-optical indicator element comprising:

providing a substrate,

applying, onto said substrate, a thin film indicator structure comprising a plurality of thin-film layers, at least one of said layers comprising magneto-optically (MO)-active material having predetermined magnetic properties including magnetic anisotropy, magnetization saturation value, coercive field value; and a magneto-optical effect value, and

modulating the thickness and/or refractive index of at least one of said layers in a predetermined fashion so that said indicator structure exhibits at least one optical mode which is at least partially localized within and/or at at least one interface of said at least one MO-active layer; said at least one optical mode being at least partially localized in said one layer having modulated thickness and/or refractive index

wherein the optical mode is a hybrid surface plasmon mode.

63 (Currently Amended). An optical apparatus comprising:

a light source;

a light detector; and

a magneto-optical indicator element disposed along an optical path between said light source and said light detector, said magneto-optical indicator element comprising a substrate and a thin film indicator structure comprising a plurality of thin-film layers disposed on a said substrate, at least one of said layers comprising magneto-optically (MO)-active material having predetermined magnetic properties including magnetic anisotropy, magnetization saturation value, coercive field value; and a magneto-optical effect value; said indicator structure including at least one of said layers having a thickness and/or refractive index modulated in a predetermined fashion; said indicator structure having at least one optical mode which is at least partially

localized within and/or at at least one interface of said at least one MO-active layer; said at least one optical mode being at least partially localized in said one layer having modulated thickness and/or refractive index,

wherein the optical mode is a hybrid surface plasmon mode.